

Teaching Plan
Academic Year 2015– 2016

Class: **B.Sc. I year**

Semester: **II**

Subject: **Physics**

Paper No.: **IV (PHY - 104)**

Period per week: **3+12**

Weeks (Total):**15**

Week	Topics to be covered
1.	<u>Geometrical Optics and Optical Instrument:</u> Cardinal points.
2.	Cardinal points of Co- axial lens system, equivalent focal length.
3.	Huygen's Eye piece, Ramsden's eye piece and their cardinal points.
4.	Problems on topic Geometrical optics.
5.	<u>Interference:</u> Interference in thin film due to reflected & transmitted light.
6.	Interference in wedge shaped film, Newton's rings.
7.	Michelson interferometer, Problems on topic.
8.	<u>Diffraction:</u> Diffraction at thin wire, diffraction at double slit.
9.	Plane transmission diffraction grating, Wave length determination.
10.	Resolving Power, Rayleigh's criterion, RP of Prism.
11.	R.P of grating and problems on topic.
12.	<u>Polarisation :</u> Maluslaw, Double refraction, Huygens's theory
13.	Nicol Prism, optical activity, Fresnel's theory
14.	Specific rotation, Laurent's half shade polarimeter, Specific rotation of sugar solution.
15.	Revision.

Teacher's Signature
(Dr. S. A. Hafiz)

H. O. D's Signature

Teaching Plan
Academic Year 2015 – 2016

Class: B.Sc. I Year

Semester: II

Subject: Physics

Paper No: V (PHY – 105)

Periods per weeks: Th.; Pract. Weeks (Total) :

WEEKS	TOPICS TO BE COVERED
1	1) Vector Algebra : - Dot and cross product (Revision), scalar triple product and it's geometrical interpretation, vector triple product
2	gradient of a scalar and it's physical interpretation, Divergence and curl of vector function and their physical interpretation,
3	line, surface and volume integrals, Gauss's divergence theorem and Stoke's theorem .
4	Proof of vector identities
5	2) Electrostatics: - Coulomb's Law , Electric field , field due to point charge, flux of electric field
6	Gauss's law (with proof) , Differential form of Gauss law , electric potential , potential due to a point charge, Potential and field due to electric dipole.
7	Dielectrics, polarization of dielectric, Gauss's law in dielectrics, Relation between D, E and P .
8	Molecular field in dielectrics (Clausius- Mossotti Relation)
9	3) Magnetostatics: - Magnetic field , Magnetic induction , magnetic flux , Biot-Savart law
10	Magnetic induction due to straight conductor carrying current , magnetic induction on the axis of solenoid ,Ampere's Law
11	Differential form Ampere's Law, Moving coil ballistic Galvanometer - expression for charge.
12	Correction for damping, current and voltage sensitivities of B.G., Amperes law, differential form of Amperes law
13	4) Transient Currents: -Growth and decay of current in a circuit containing L and R , charge and discharge of a capacitor through resistor,
14	Growth and decay of charge in LCR circuit.
15	REVISION

Teacher's Signature

H.O.D.'s Signature

Teaching Plan

Academic Year 2015– 2016

Class: **B.Sc. I year**

Semester: **II**

Subject: **Electronics**

Paper No.: **IV (ELE-201)**

Period per week: **(03) Three**

Weeks (Total): **15**

Week	Topics to be covered
1.	Introduction, bias for transistor, amplifier, transistor load line analysis.
2.	Operating point, inherent variation of transistor, parameter, stabilizations, and transistor biasing circuit.
3.	Stability factor, method of transistor biasing, base resistor method.
4.	Voltage divider bias method summary problems.
5.	Small signal amplifier, two port network, h parameter equivalent circuit, equivalent circuit for BJT.
6.	Tran's conductance model, CE amplifier, CB amplifier, emitter follower ckt.
7.	Equivalent circuit for JFET, Common Source amplifier, follower amplifier.
8.	Feedback amplifier, an amplifier black box with feedback stabilization of gain by negative feedback.
9.	Effect of feedback on output, resistance as input resistance.
10.	Voltage series feedback examples summary
11.	Multistage transistor, amplifier, introduction,
12.	Important terms, RC coupled transistor amplifier
13.	RC coupled transistor amplifier, diagram explanation direct coupled amplifier
14.	Summary repetition.
15.	

Teacher's Signature
(Dr. J.M. Pathan)

H. O. D's Signature

MAULANA AZAD COLLEGE, OF ARTS, SCIENCE AND COMMERCE,
DEPARTMENT OF PHYSICS AND ELECTRONICS

Teaching Plan
Academic Year 2015– 2016

Class: B.Sc. First Year

Semester: **II**

Subject: Electronics

Paper No.: **V (ELE-202)**

Period/Week: Theory: 03

Weeks (Total): 15

WEEKS	TOPICS TO BE COVERED
1.	SR flip flop (using gates).
2.	Edge triggered flip flops (SR, D, JK and T).
3.	Asynchronous inputs, Master slave JK flip flop, Operating characteristics.
4.	Asynchronous Counters (three and four bit).
5.	Synchronous Counters (three and four bit), decade Counter (asynchronous and synchronous).
6.	Up/Down Synchronous Counter (three bit only).
7.	Shift register functions, Serial In – Serial Out Shift Register.
8.	Serial In – Parallel Out Shift Register, Parallel In – Serial Out Shift Register.
9.	Parallel In – Parallel Out Shift Register, Bidirectional Shift Register, Ring Counter.
10.	Memory Concept, Read Only Memory (RAM).
11.	Programmable ROMs (PROMs & EPROMs).
12.	Random Access (Read / Write) Memories (RAMs).
13.	R-2R Ladder type D/A converter, DAC Characteristics (Monotonicity, Resolution, Accuracy and Setting Time).
14.	Successive approximation A/D converter, Dual slope A/D converter.
15.	Study of DAC0808 and ADC0801 chips.

Teacher's Signature

H. O. D.'s signature